PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference STA04106	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International Application No. **PCT/AU2003/001349**	International Filing Date *(day/month/year)* 13 October 2003	Priority Date *(day/month/year)* 11 October 2002
International Patent Classification (IPC) or national classification and IPC **Int. Cl.**[7] B60P 3/22 B62D 25/22 A62B 1/20, 35/00		
Applicant STANDFAST ENTERPRISES PTY LTD et al		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of **3** sheets, including this cover sheet.

   ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of sheet(s).

3. This report contains indications relating to the following items:

   - I ☒ Basis of the report
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of the report
30 April 2004	11 October 2004
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer **SARAVANAMUTHU PONNAMPALAM** Telephone No. (02) 6283 2070

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/AU2003/001349

I. Basis of the report

1. With regard to the **elements** of the international application:*

☐ the international application as originally filed.

☒ the description, pages **1,4-10** , as originally filed,
pages , filed with the demand,
pages **2,3,3a,11,12 & 12a** , received on **6 September 2004** with the letter of **6 September 2004**

☒ the claims, pages , as originally filed,
pages , as amended (together with any statement) under Article 19,
pages , filed with the demand,
pages **13-15b** , received on **6 September 2004** with the letter of **6 September 2004**

☒ the drawings, pages **1-6** , as originally filed,
pages , filed with the demand,
pages , received on with the letter of

☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☐ the language of publication of the international application (under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages

☐ the claims, Nos.

☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report*

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims **1-31**	**YES**
	Claims	**NO**
Inventive step (IS)	Claims **1-31**	**YES**
	Claims	**NO**
Industrial applicability (IA)	Claims **1-31**	**YES**
	Claims	**NO**

2. Citations and explanations (Rule 70.7)

NOVELTY (N) and INVENTIVE STEP (IS)

A. The documents constituting the closest prior art are :

(i) AU 199873988 A

(ii) AU 199918533 A

B. The subject matter of claims 1 ,8, 17 & 24 differs from these prior art documents in that the support structure that includes a lower end portion that is pivotally connected to the base and a handle that is spaced from said base. This feature will assist a person while climbing up the ladder and over the edge of the roof structure.

C. This distinguishing feature of the invention will improve the safety of the apparatus.

D. Therefore the application satisfies the criteria set forth in PCT Article 33(2-3), concerning the novelty and inventive step of the independent claims 1,8,17 & 24.

E. The criteria concerning novelty and inventive step of claims 2-7, 9-16, 18-23 & 25-31 are satisfied because these claims are dependent on claims 1, 8, 17 & 24 respectively.

INDUSTRIAL APPLICABILITY (IA)

The invention defined in claims 1-31 satisfies the criterion set forth in PCT Article 33(4).

and a support structure having a base that is adapted to engage said guide and which is capable of movement along said guide. The safety apparatus may also include a harness that the person can wear, and which itself is capable of being secured to the support structure.

Unfortunately, because of the design of the safety apparatus referred to above, typically the safety apparatus can only be accessed by persons once they are standing on the roof structure. Further, in order to stand on the roof structure, often it is necessary for the person to climb up a ladder and over an edge of the roof structure, which itself could cause the person to fall and hurt themselves.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a support apparatus that ameliorates at least some of the deficiencies of the prior art.

With the foregoing in view, this invention in one aspect relates to a support assembly for a vehicle of the type that includes an enclosed load carrying compartment having a roof, said support assembly being adapted to provide support for a person when moving about on said roof, said support assembly including:

a guide that is mountable on said roof;

a base that is adapted to engage said guide and which is capable of movement along said guide while remaining engaged therewith;

a support structure that includes a lower end portion that is pivotally connected to said base and a handle that is spaced from said base, and

a lock for selectively locking said support structure in a desired attitude relative to said base.

In another aspect, this invention relates to a vehicle, said vehicle including:

an enclosed load carrying compartment having a roof;

a guide that is mountable on said roof;

a base that is adapted to engage said guide and which is capable of movement along said guide while remaining engaged therewith;

a support structure that includes a lower end portion that is pivotally connected to said base and a handle that is spaced from said base, and

a lock for selectively locking said support structure in a desired attitude relative to said base, and wherein use, a person may grasp hold of said handle for support and/or to move said base along said guide while walking on said roof.

The guide may be substantially straight or arcuate. Further, the guide may be of unitary construction, or may comprise a plurality of individual guide elements that when arranged end to end form said guide.

The guide may be any suitable shape. For example, the guide may have an external cross-sectional shape that is round, square or polygonal, and wherein the guide may be of solid or tubular construction.

The guide may also include attachment means for attaching the guide to a roof, or similar structure. For example, the attachment means may include a plate or flange that is attached to an underside of the guide, and which may include one or more apertures formed therein.

The base may include an opening through which the guide extends. For example, the base may include a pair of jaws that may be fixed or moveable, and which may either at least partially surround or clamp about the guide.

Alternatively, in another embodiment, the base may include a protrusion that is locatable within a channel shaped recess that is formed in and which extends along the length of the guide. Further, the internal cross-sectional shape of the

recess and the external cross-sectional shape of the protrusion may be complementary, and may be designed so that the protrusion cannot be withdrawn from the recess.

The base may also include a mounting to which the support structure can be pivotally connected. The mounting may include a mounting plate or flange, or a pair of opposing mounting plates or flanges, each having a mounting aperture formed therein through which a mounting pin or such like may extend.

The support structure in it's simplest form may comprise a post having a free end portion that is capable of serving as a handle. For example, the support structure may resemble a walking stick. However, in other embodiments, the support structure may be more complex, and may include one or more bracing members and such like.

The lock may include an actuator for selectively engaging and disengaging the lock. The actuator is preferably located on the handle of the support structure or on the support structure, adjacent said handle.

In one embodiment, the lock may be adapted to selectively engage discrete locations on the base, such as the mounting. These locations may coincide with predetermined preferred positions of the support structure relative to the vehicle to which the support assembly is attached.

Alternatively, the lock may be adapted to engage the base, such as the mounting, at any position between opposing limits on said base.

The support assembly may also include braking means for checking movement of the base along the guide. Like the lock, the brake may include an actuator for selectively engaging and disengaging the brake. The actuator is preferably located on the handle of the support structure or on the support structure, adjacent said handle.

action of the spring 75a, thereby preventing further movement of the post 51 relative to the base 12.

The handle 15 includes two links 80 and 81 that are attached thereto.

The support assembly 10 also includes a harness 90, consisting of a belt 91 that may secured about a user's waist, and two straps 92, each having a fixed end that is attached to the belt 91 and a free end 93 equipped with a clasp 94. In use, the clasps 94 may each be connected to a respective link 80 or 81, if so desired.

Figures 1 to 6 show the support assembly 10 in use. Specifically, once the harness 90 has been secured about the user's waist, the user then uses the ladder 100 to climb up the side of the rear 101 of the storage vessel 17.

When the user reaches the top of the ladder, the user may secure at least one of the clasps 94 to one of the links 80 or 81. Consequently, should the user slip or loose their balance while climbing on to the roof 18, they will not fall and injure themselves.

While continuing to climb the ladder 100, the user may grasp hold of the handle 15 for support, which in the position shown in figure 4 extends rearwardly beyond the edge of the roof 18.

Before placing his or her feet on the upper most rungs of the ladder 100, the user can, by pulling on the locking handle 79, disengage the locking pin 74 and the notches 49d, raise the handle 15, which itself can then be locked in place by releasing the locking handle such that the locking pin engages notches 49b or 49c. By repositioning the handle 15, which is now higher and located over the roof 18, it is believed that the user will find it easier to climb on to the roof 18.

Once standing on the roof 18, the user may by pulling on the locking handle 79, disengage the locking pin 74 and the

notches 49b or 49c, move the post 41 such that it now stands upright, which itself can then be locked in place by releasing the locking handle such that the locking pin engages notches 49a.

In order then to move the support structure 13 along the guide 11 while holding on to the handle 15 for support, the user must pull on the brake handle 72 so as to disengage the jaws 57 and the steel section 20.

Similarly, in order to prevent further movement of the support structure 13 along the guide 11, such as while working near an access opening, the user need only release their grip on the brake handle 72 so as to permit engagement of the jaws 57 with the steel section 20.

When climbing down from the roof 18 using the ladder 100, the procedure just described may be followed in reverse.

It will be appreciated that the support assembly 10 offers a safer alternative to working on elevated structures, such as a storage vessel, than the prior art.

It will also be appreciated that the above example is given as an illustration only of the present invention and that all such modifications thereto as would be apparent to persons skilled in the art are deemed to fall within the broad scope and ambit of this invention as herein defined in the appended claims.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A support assembly for a vehicle of the type that includes an enclosed load carrying compartment having a roof, said support assembly being adapted to provide support for a person when moving about on said roof, said support assembly including:

a guide that is mountable on said roof;

a base that is adapted to engage said guide and which is capable of movement along said guide while remaining engaged therewith;

a support structure that includes a lower end portion that is pivotally connected to said base and a handle that is spaced from said base, and

a lock for selectively locking said support structure in a desired attitude relative to said base.

2. A support assembly as claimed in claim 1, wherein said lock includes a lock actuator for selectively engaging and disengaging the lock.

3. A support assembly as claimed in claim 2, wherein said lock actuator is located on said handle.

4. A support assembly as claimed in any one of claims 1 to 3, wherein said lock is adapted to engage discrete locations on the base and wherein said discrete locations coincide with different attitudes of inclination of said support structure relative to said base.

5. A support assembly as claimed in any one of claims 1 to 4, wherein there is also provided braking means, mounted on said support assembly, for checking movement

of said base along said guide.

6. A support assembly as claimed in claim 5, wherein said braking means includes a brake actuator for selectively actuating said braking means.

7. A support assembly as claimed in claim 6, wherein said actuator is located on said handle.

8. A vehicle including:

an enclosed load carrying compartment having a roof;

a guide that is mountable on said roof;

a base that is adapted to engage said guide and which is capable of movement along said guide while remaining engaged therewith;

a support structure that includes a lower end portion that is pivotally connected to said base and a handle that is spaced from said base, and

a lock for selectively locking said support structure in a desired attitude relative to said base, and wherein use, a person may grasp hold of said handle for support and/or to move said base along said guide while walking on said roof.

9. A vehicle as claimed in claim 8, wherein said lock includes a lock actuator for selectively engaging and disengaging the lock.

10. A vehicle as claimed in claim 9, wherein said lock actuator is located on said handle.

11. A vehicle as claimed in any one of claims 8 to 10,

wherein said lock is adapted to engage discrete locations on the base and wherein said discrete locations coincide with different attitudes of inclination of said support structure relative to said base.

12. A vehicle as claimed in any one of claims 8 to 11, wherein there is also provided braking means, mounted on said support assembly, for checking movement of said base along said guide.

13. A vehicle as claimed in claim 12, wherein said braking means includes a brake actuator for selectively actuating said braking means.

14. A vehicle as claimed in claim 13, wherein said actuator is located on said handle.

15. A support assembly substantially as hereinbefore described in respect of the drawings.

16. A vehicle substantially as hereinbefore described in respect of the drawings.